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## EBHQ011-016BA6V3


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# 1 Features

- Reversible monobloc
- H2O piping between outdoor unit and indoor heating appliances
- Freeze protection of hydraulic parts
- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

# 2 Specifications

| 2-1 NOMINAL CAPACITY AND NOMINAL INPUT | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Condition 1 | Heating capacity | Nominal | kW | 11.20 | 14.00 | 16.00 |
| | Cooling capacity | Nominal | kW | 12.85 | 15.99 | 16.73 |
| | Heating PI | Nominal | kW | 2.47 | 3.20 | 3.79 |
| | Cooling PI | Nominal | kW | 3.78 | 5.65 | 6.28 |
| | COP | Nominal | | 4.54 | 4.37 | 4.22 |
| | EER | Nominal | | 3.39 | 2.83 | 2.66 |
| Condition 2 | Heating capacity | Nominal | kW | 10.87 | 13.10 | 15.06 |
| | Cooling capacity | Nominal | kW | 10.00 | 12.50 | 13.10 |
| | Heating PI | Nominal | kW | 3.22 | 3.91 | 4.62 |
| | Cooling PI | Nominal | kW | 3.60 | 5.30 | 5.85 |
| | COP | Nominal | | 3.37 | 3.35 | 3.26 |
| | EER | Nominal | | 2.78 | 2.36 | 2.24 |
| Notes | | | | Condition 1: cooling Ta 35°C - LWE 18°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (Dt=5°C) | | |
| | | | | Condition 2: cooling Ta 35°C - LWE 7°C (Dt=5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C) | | |

| 2-2 TECHNICAL SPECIFICATIONS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Casing | Colour | | | Ivory white | | |
| | Material | | | Painted galvanised steel | | |
| Dimensions | Unit | Height | mm | 1,418 | | |
| | | Width | mm | 1,435 | | |
| | | Depth | mm | 382 | 382 | 382 |
| | Packing | Height | mm | 1,557 | | |
| | | Width | mm | 1,500 | | |
| | | Depth | mm | 430 | 430 | 430 |
| Weight | Unit | | kg | 180 | 180 | 180 |
| | Packed unit | | kg | 200 | 200 | 200 |
| Packing | Material | | | Wood | | |
| | | | | Carton | | |
| | | | | Plastic foil | | |
| | Weight | | kg | 20 | 20 | 20 |
| Operation Range | Heating - Ambient | Min | °CDB | -15 | -15 | -15 |
| | | Max | °CDB | 35 | 35 | 35 |
| | Heating - Waterside | Min | °C | 15 | 15 | 15 |
| | | Max | °C | 55 | 55 | 55 |
| | Cooling - Ambient | Min | °CDB | 10 | 10 | 10 |
| | | Max | °CDB | 46 | 46 | 46 |
| | Cooling - Waterside | Min | °C | 5 | 5 | 5 |
| | | Max | °C | 22 | 22 | 22 |
| | Domestic hot water -Ambient | Min | °CDB | -15 | -15 | -15 |
| | | Max | °CDB | 43 | 43 | 43 |
| | Domestic hot water - Waterside | Min | °C | 25 | 25 | 25 |
| | | Max | °C | 80 | 80 | 80 |
| Sound Level (nominal) | Heating | Sound Power | dBA | 64 | 64 | 66 |
| | | Sound Pressure | dBA | 51 | 51 | 52 |
| | Cooling | Sound Power | dBA | 65 | 66 | 69 |
| | | Sound Pressure | dBA | 50 | 52 | 54 |
| Sound Level (Night quiet) | Heating | Sound Pressure | dBA | 42 | 42 | 43 |
| | Cooling | Sound Pressure | dBA | 45 | 45 | 46 |
| Refrigerant | Type | | | R-410A | | |
| | Charge | | kg | 2.95 | 2.95 | 2.95 |
| | Control | | | Electronic expansion valve | | |
| | Nr of Circuits | | | 1 | 1 | 1 |

# 2 Specifications

| 2-2 TECHNICAL SPECIFICATIONS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Refrigerant Oil | Type | | | Daphne FVC68D | | |
| | Charged Volume | | l | 1.0 | 1.0 | 1.0 |
| Defrost Method | | | | Pressure equalising | | |
| Defrost Control | | | | Sensor for outdoor heat exchanger temperature | | |
| Capacity Control Method | | | | Inverter controlled | | |
| Safety Devices | | | | High pressure switch | | |
| | | | | Fan motor thermal protector | | |
| | | | | Fuse | | |
| Notes | | | | The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information. | | |
| | | | | Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) | | |
| | | | | Conditions: Ta 35°C - LWE 7°C (DT = 5°C) | | |
| | | | | 15°-25°C: BUH only, no heat pump operation = during commisioning | | |
| | | | | including piping + PHE + back-up heater / excluding expansion vessel | | |
| | | | | E(D)(B)L* model can reach -20°C / E(D)(B)L*6W1 model can reach -25°C but without capacity guarantee | | |
| | | | | Excluding water volume in the unit. In most applications this minimum water volume will have a satisfying result. In critical processes or in rooms with a high heat load through, extra water volume might be required. | | |

| 2-3 MAIN COMPONENTS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Air heat exchanger | Specifications | Length | mm | 857 | 857 | 857 |
| | | Nr of Rows | | 2 | 2 | 2 |
| | | Fin pitch | mm | 1.4 | 1.4 | 1.4 |
| | | Nr of Passes | | 5 | 5 | 5 |
| | | Face area | m² | 1.131 | 1.131 | 1.131 |
| | | Nr of Stages | | 60 | 60 | 60 |
| | | Empty tubeplate hole | | 0 | 0 | 0 |
| | Tube type | | | Hi-XSS (8) | | |
| | Fin | Type | | WF fin | | |
| | | Treatment | | Anti-corrosion treatment (PE) | | |
| Fan | Type | | | Propeller | | |
| | Quantity | | | 2 | 2 | 2 |
| Air Flow Rate (nominal at 230V) | Heating | High | m³/min | 90 | 90 | 90 |
| | Cooling | High | m³/min | 96 | 100 | 97 |
| Fan | Discharge direction | | | Horizontal | | |
| | Motor | Quantity | | 2 | 2 | 2 |
| | | Model | | Brushless DC | | |
| Motor | Speed (nominal) | Steps | | 8 | 8 | 8 |
| | | Heating | rpm | 760 | 760 | 760 |
| | | Cooling | rpm | 780 | 780 | 780 |
| Fan | Motor | Output | W | 70 | 70 | 70 |
| | | Drive | | Direct drive | | |
| Compressor | Quantity | | | 1 | 1 | 1 |
| | Motor | Model | | JT100G-VD | | |
| | | Type | | Hermetically sealed scroll compressor | | |
| | | Motor Output | W | 2,200 | | |
| | | Starting Method | | Inverter driven | | |
| Motor | Crankcase Heater | Output | W | 33 | 33 | 33 |
| Pump | Type | | | Water cooled | | |
| | Nr. of speed | | | 2 | 2 | 2 |
| | Nominal ESP unit | Heating | kPa | 52.5 | 43.5 | 35.0 |
| | | Cooling | kPa | 55.9 | 49.1 | 46.8 |
| | Power input | | W | 210 | 210 | 210 |

# 2 Specifications

| 2-3 MAIN COMPONENTS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Water side Heat exchanger | Type | | | Brazed plate | | |
| | Quantity | | | 1 | 1 | 1 |
| | Water volume | | l | 1.01 | 1.01 | 1.01 |
| | Water flow rate Min. | | l/min | 16 | 16 | 16 |
| | Water flow rate Nom. | Heating | l/min | 32.1 | 40.1 | 45.9 |
| | | Cooling | l/min | 36.8 | 45.9 | 48.0 |
| | Water flow rate Max. | | l/min | 58 | 58 | 58 |
| | Insulation material | | | Foamed synthetic elastomer | | |
| Expansion vessel | Volume | | l | 10 | 10 | 10 |
| | Maximum water pressure | | bar | 3 | 3 | 3 |
| | Pre pressure | | bar | 1.0 | 1.0 | 1.0 |
| Water filter | Diameter perforations | | mm | 1 | 1 | 1 |
| | Material | | | Brass | | |
| Water circuit | Piping connections | | inch | G5/4 (FEMALE) | | |
| | Piping | | inch | 5/4" | | |
| | Safety valve | | bar | 3 | 3 | 3 |
| | Manometer | | | Yes | | |
| | Drain valve / Fill valve | | | yes | | |
| | Shut off valve | | | yes | | |
| | Air purge valve | | | yes | | |
| | Total water volume (6) | | l | 5.5 | 5.5 | 5.5 |
| | Minimum water volume system | | l | 20 | 20 | 20 |

| 2-4 ELECTRICAL SPECIFICATIONS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Power supply compressor component | Main Power | Name | | V3 | | |
| | | Phase | | 1 | 1 | 1 |
| | | Frequency | Hz | 50 | 50 | 50 |
| | | Voltage | V | 230 | 230 | 230 |
| | Voltage range | Minimum | V | -10% | | |
| | | Maximum | V | +10% | | |
| | Current | Minimum Ssc value | kVa | Equipment complying with EN/IEC 61000-3-12(×) | | |
| Current | Maximum running current | Cooling | A | 22.8 | 27.4 | 31.9 |
| Power supply compressor component | Current | Recomended fuses | A | 32 | 32 | 32 |
| | Wiring connections | For power supply compressor component | | See installiation manual | | |
| Power supply hydraulic component | Current back-up heater | Type | | 6V3 | | |
| Current back-up heater | Power Supply | Phase | | 1~ | | |
| | | Frequency | Hz | 50 | 50 | 50 |
| | | Voltage | V | 230 | 230 | 230 |
| | Running Current | Back-up heater | A | 26 | 26 | 26 |
| Running Current | Back-up heater + booster heater | +EK*V3 | A | 39(26+13) | | |
| Current back-up heater | Z-max | Back-up heater | A | 0.29 | 0.29 | 0.29 |
| | | Back-up heater + booster heater | A | 0.17 | 0.17 | 0.17 |
| | Minimum Ssc value | +EK*V3 | kVa | Equipment complying with EN/IEC 61000-3-12(**) | | |

# 2 Specifications

| 2-4 ELECTRICAL SPECIFICATIONS | | | | EBHQ011BA6V3 | EBHQ014BA6V3 | EBHQ016BA6V3 |
|---|---|---|---|---|---|---|
| Power supply hydraulic component | Voltage range | Minimum | V | -10% | | |
| | | Maximum | V | +10% | | |
| | Wiring connections | Connection type | | for power supply hydraulic compartment | | |
| | | Quantity of wires | | 3G | | |
| | | Type of wires | | Select diameter and type according to national and local regulations | | |
| | | Connection type | | for power supply connection to optional sanitary tank + Q2L | | |
| | | Quantity of wires | | 3G | | |
| | | Type of wires | | Select diameter and type according to national and local regulations | | |
| | | Type of wires | | For more details on voltage range and current refer to installation manual | | |
| | | Connection type | | for connection with R5T | | |
| | | Quantity of wires | | Wire included in option EKHWS* | | |
| | | Type of wires | | Wire included in option EKHWS* | | |
| | | Connection type | | for connection with A3P | | |
| | | Quantity of wires | | Depends on thermostat type, refer to installation manual | | |
| | | Type of wires | | Select diameter and type according to national and local regulations | | |
| | | Type of wires | | Voltage 230V / Maximum current: 100mA / Minimum 0.75mm² | | |
| | | Connection type | | for connection with M2S | | |
| | | Quantity of wires | | 3G | | |
| | | Type of wires | | Select diameter and type according to national and local regulations | | |
| | | Type of wires | | Voltage 230V / Maximum current: 100mA / Minimum 0.75mm² | | |
| | | Connection type | | for connection with M3S | | |
| | | Quantity of wires | | 3G or 4G | | |
| | | Type of wires | | Select diameter and type according to national and local regulations | | |
| | | Type of wires | | Voltage 230V / Maximum current: 100mA / Minimum 0.75mm² | | |
| | Notes | | | Power supply compressor compartment is for compressor, fan, pump and controller | | |
| | | | | In accordance with EN/IEC 61000-3-11 (1), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (3) smaller than or equal to Zmax. | | |
| | | | | Installer can reduce capacity of the heater from 6 to 3kW. The current is then reduced from 26 to 13A. Instructions see installation manual. | | |
| | | | | Installer can reduce capacity of the heater from 6 to 3.5kW. The current is then reduced from 8.7 to 5A. Instructions see installation manual. | | |
| | | | | (1)European/International Technical Standard setting the limits for voltage changes , voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current <= 75A. | | |
| | | | | (2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16A =< 75A per phase. | | |
| | | | | (3) System impedance | | |
| | | | | Power supply hydraulic compartment is for the electric heater. The optional domestic warm water tank has a separate power supply. | | |
| | | | | Conditions: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) | | |

# 3 Options

**EBHQ011-016BA6V3**

**Kit availability for E(D/B)(H/L)Q011-016BA***

| | | Altherma Monoblock / Low temperature | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1-phase | | | | | | 3-phase | | | | | |
| | | Zone 2 | | | Zone 3 | | | Zone 2 | | | Zone 3 | | |
| | | EDLQ***BA6V3 | | | EDHQ***BA6V3 | | | EDLQ***BA6W1 | | | EDHQ***BA6W1 | | |
| | | EBLQ***BA6V3 | | | EBHQ***BA6V3 | | | EBLQ***BA6W1 | | | EBHQ***BA6W1 | | |
| Reference | Description | 011 | 014 | 016 | 011 | 014 | 016 | 011 | 014 | 016 | 011 | 014 | 016 |
| *KRP1HBB | Digital I/O PCB (1) | O | O | O | O | O | O | O | O | O | O | O | O |
| *KBPHTH16A | Bottom plate heater | - | - | - | O(2) | O(2) | O(2) | - | - | - | O(2) | O(2) | O(2) |
| *KDK04 | Drain plug kit | - | - | - | O(2) | O(2) | O(2) | - | - | - | O(2) | O(2) | O(2) |
| *KHWS150*3V3 | Stainless domestic hot water tank 150l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWS200*3V3 | Stainless domestic hot water tank 200l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWS300*3V3 | Stainless domestic hot water tank 300l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWSU150*3V3 | Stainless domestic hot water tank 150l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWSU200*3V3 | Stainless domestic hot water tank 200l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWSU300*3V3 | Stainless domestic hot water tank 300l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWS200*3Z2 | Stainless domestic hot water tank 200l 2~400V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWS300*3Z2 | Stainless domestic hot water tank 300l 2~400V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWE150*3V3 | Enamel domestic hot water tank 150l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWE200*3V3 | Enamel domestic hot water tank 200l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWE300*3V3 | Enamel domestic hot water tank 300l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWE200*3Z2 | Enamel domestic hot water tank 200l 2~400V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWE300*3Z2 | Enamel domestic hot water tank 300l 2~400V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KHWET150*3V3 | Wallmounted enamel domestic hot water tank 150l 1~230V | O | O | O | O | O | O | O | O | O | O | O | O |
| *KSOLHWAV1 | Solarkit (4) | O | O | O | O | O | O | O | O | O | O | O | O |
| *KRTW | Wired room thermostat option kit | O | O | O | O | O | O | O | O | O | O | O | O |
| *KRTR | Wireless room thermostat option kit (incl. receiver) | O | O | O | O | O | O | O | O | O | O | O | O |
| *KRTETS | External temperature sensor option kit (3) | O | O | O | O | O | O | O | O | O | O | O | O |
| *KWBSWW150 | Wall bracket for *KHWS(U)150*3V3 or *KSWW150V3* | O | O | O | O | O | O | O | O | O | O | O | O |

3TW59259-1

**REMARK**

1. Other combinations are not guaranteed

**NOTES**

1. Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In *KSOLHWAV1, the same digital I/O PCB as for *KHRP1HB is already included.
2. It is not allowed to combine bottom plate heater and drain plug kit.
3. *KRTETS can only be used in combination with *KRTR
4. Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.
5. E(B/D)L units include special equipment (insulation, heater sheet,...) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(B/D)H models may experience problems with severe ice build up on the aircooled coil.
   In case such conditions are expected, the e(B/D)L must be installed instead.

# 3 Options

**EBHQ011-016BA6V3**

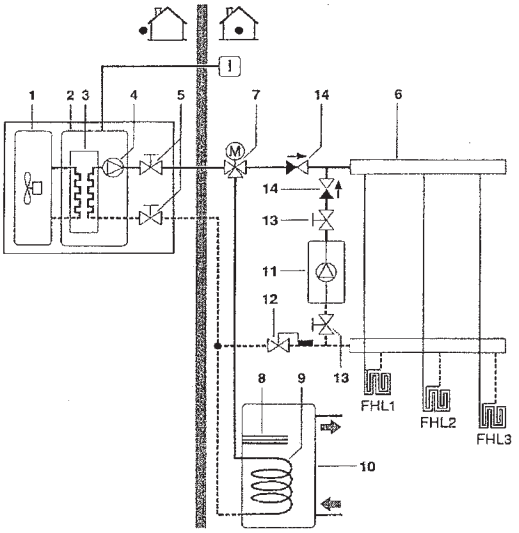
## Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the altherma indoor unit or by an auxiliary boiler connected in the system. An auxiliary contact decides whether either the E(D/B)(H/L)Q* hydro module or the boiler will operate.This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

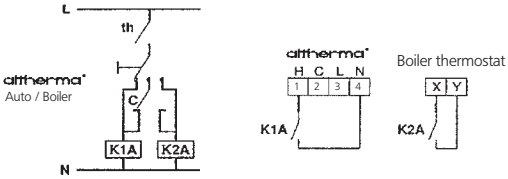
Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the hydro module, including when the boiler is in operation for space heating.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.




1 Compressor module
2 Hydro module
3 Heat exchanger
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (field supply)
8 Booster heater
9 Heat exchanger coil
10 Domestic hot water tank
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL 1...3 Floor heating loop (field supply)
I User interface

## Field wiring




| | |
|---|---|
| Boiler thermostat | Boiler thermostat |
| C | Auxiliary contact (normal closed) |
| th | Heating only room thermostat |
| K1A | Auxiliary relay for activation of E(D/B)(H/L)Q * unit (field supply) |
| K2A | Auxiliary relay for activation of boiler (field supply) |

### Operation

When the room thermostat (th) closes, either the E(D/B)(H/L)Q * unit or the boiler starts operating, depending on the position of the auxiliary contact ( C )

Make sure that auxiliary contact ( C ) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)(H/L)Q * unit and the boiler. If the auxiliary contact ( C) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or turned ON/OFF by the sun.
Frequent switching may cause corrosion of the boiler in an early stage.Contact the manufacturer of the boiler.

During heating operation of the E(D/B)(H/L)Q * unit, the Altherma unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature.
During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller.
Never set the target leaving water temperature setpoint on the boiler controller above 55°C.

Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Altherma unit.

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)(H/L)Q * switch box correctly. Refer to ' Room thermostat installation configuration' in the installation manual supplied with the unit.

Make sure that return water to the E(D/B)(H/L)Q * heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature setpoint on the boiler controller above 55°C and it required, install an aquastat(*) valve in the return water flow of the E(D/B)(H/L)Q* unit.
Daikin shall not be held liable fo any damage resulting from failure to observe this rule.

(*)The aquastat valve must be set for 55°C and must operate to close the return water flow to the E(D/B)(H/L)Q * unit when the measured temperature exceeds 55°C. When temperature drops to a lower level, the aquastat valve must operate to open the return water flow to the E(D/B)(H/L)Q * unit again.

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# 4 Capacity tables

## 4 - 1 Heating capacity tables

**EBHQ011-016BA6V3**

**Maximum Heating Capacity** (Peak values)

| | LWC [°C] | 30 | | 35 | | 40 | | 45 | | 50 | | 55 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{amb}$ [°C] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] |
| E(D/B)(H/L)Q011BA6V3 | -20 (a) | 5,86 | 2,17 | 5,51 | 2,37 | | | | | | | | |
| | -15 | 6,63 | 2,21 | 6,23 | 2,42 | 6,09 | 2,67 | | | | | | |
| | -7 | 8,13 | 2,24 | 7,66 | 2,47 | 7,51 | 2,72 | 7,32 | 3,18 | | | | |
| | -2 | 9,28 | 2,25 | 8,76 | 2,48 | 8,61 | 2,74 | 8,41 | 3,21 | 8,11 | 3,57 | | |
| | 2 | 10,32 | 2,25 | 9,77 | 2,48 | 9,62 | 2,75 | 9,42 | 3,22 | 9,10 | 3,59 | 8,51 | 4,00 |
| | 7 | 11,80 | 2,23 | 11,20 | 2,47 | 11,06 | 2,75 | 10,87 | 3,22 | 10,53 | 3,60 | 9,88 | 4,02 |
| | 12 | 12,80 | 2,16 | 12,18 | 2,40 | 12,07 | 2,68 | 11,89 | 3,16 | 11,57 | 3,54 | 10,89 | 3,96 |
| | 15 | 13,84 | 2,13 | 13,20 | 2,38 | 13,10 | 2,67 | 12,93 | 3,15 | 12,60 | 3,53 | 11,89 | 3,95 |
| | 20 | 15,73 | 2,08 | 15,04 | 2,33 | 14,97 | 2,62 | 14,82 | 3,11 | 14,07 | 3,50 | 13,32 | 3,92 |
| E(D/B)(H/L)Q014BA6V3 | -20 (a) | 7,42 | 2,78 | 7,20 | 3,03 | | | | | | | | |
| | -15 | 8,29 | 2,84 | 8,00 | 3,10 | 7,72 | 3,40 | | | | | | |
| | -7 | 10,07 | 2,91 | 9,67 | 3,18 | 9,28 | 3,49 | 9,08 | 3,80 | | | | |
| | -2 | 11,46 | 2,94 | 11,00 | 3,21 | 10,54 | 3,54 | 10,29 | 3,85 | 10,13 | 4,26 | | |
| | 2 | 12,75 | 2,95 | 12,23 | 3,23 | 11,72 | 3,56 | 11,43 | 3,88 | 11,25 | 4,30 | 10,73 | 4,75 |
| | 7 | 14,59 | 2,95 | 14,00 | 3,20 | 13,42 | 3,58 | 13,10 | 3,91 | 12,89 | 4,33 | 12,30 | 4,79 |
| | 12 | 15,44 | 2,86 | 14,84 | 3,15 | 14,23 | 3,48 | 13,91 | 3,80 | 13,70 | 4,22 | 13,07 | 4,68 |
| | 15 | 16,73 | 2,84 | 16,09 | 3,14 | 15,45 | 3,48 | 15,10 | 3,81 | 14,88 | 4,22 | 14,21 | 4,68 |
| | 20 | 19,09 | 2,81 | 18,38 | 3,11 | 17,67 | 3,46 | 17,30 | 3,79 | 16,58 | 4,22 | 15,85 | 4,69 |
| E(D/B)(H/L)Q016BA6V3 | -20 (a) | 8,47 | 3,27 | 8,34 | 3,56 | | | | | | | | |
| | -15 | 9,44 | 3,34 | 9,21 | 3,64 | 8,99 | 3,99 | | | | | | |
| | -7 | 11,44 | 3,43 | 11,08 | 3,74 | 10,73 | 4,11 | 10,53 | 4,47 | | | | |
| | -2 | 13,01 | 3,47 | 12,58 | 3,79 | 12,14 | 4,17 | 11,89 | 4,54 | 11,45 | 5,01 | | |
| | 2 | 14,48 | 3,49 | 13,96 | 3,82 | 13,48 | 4,20 | 13,18 | 4,58 | 12,67 | 5,06 | 12,17 | 5,59 |
| | 7 | 16,58 | 3,51 | 16,00 | 3,79 | 15,42 | 4,24 | 15,06 | 4,62 | 14,47 | 5,11 | 13,88 | 5,64 |
| | 12 | 17,29 | 3,41 | 16,69 | 3,75 | 16,08 | 4,13 | 15,71 | 4,51 | 15,09 | 4,98 | 14,47 | 5,51 |
| | 15 | 18,75 | 3,41 | 18,10 | 3,75 | 17,45 | 4,13 | 17,05 | 4,52 | 16,38 | 5,00 | 15,71 | 5,53 |
| | 20 | 21,42 | 3,40 | 20,70 | 3,74 | 19,98 | 4,13 | 19,53 | 4,52 | 18,77 | 5,01 | 18,01 | 5,54 |

**Maximum Heating Capacity** (integrated values)

| | LWC [°C] | 30 | | 35 | | 40 | | 45 | | 50 | | 55 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{amb}$ [°C] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] | HC [kW] | PI [kW] |
| E(D/B)(H/L)Q011BA6V3 | -20 (a) | 4,96 | 2,13 | 4,67 | 2,32 | | | | | | | | |
| | -15 | 5,61 | 2,16 | 5,27 | 2,37 | 5,16 | 2,61 | | | | | | |
| | -7 | 6,88 | 2,20 | 6,49 | 2,41 | 6,36 | 2,67 | 6,19 | 3,12 | | | | |
| | -2 | 7,70 | 2,16 | 7,27 | 2,38 | 7,15 | 2,63 | 6,98 | 3,08 | 6,73 | 3,43 | | |
| | 2 | 8,57 | 2,16 | 8,11 | 2,38 | 7,99 | 2,64 | 7,82 | 3,09 | 7,56 | 3,45 | 7,08 | 3,84 |
| | 7 | 11,80 | 2,23 | 11,20 | 2,47 | 11,06 | 2,75 | 10,87 | 3,22 | 10,53 | 3,60 | 9,88 | 4,02 |
| | 12 | 12,80 | 2,16 | 12,18 | 2,40 | 12,07 | 2,68 | 11,89 | 3,16 | 11,57 | 3,54 | 10,89 | 3,96 |
| | 15 | 13,84 | 2,13 | 13,20 | 2,38 | 13,10 | 2,67 | 12,93 | 3,15 | 12,60 | 3,53 | 11,89 | 3,95 |
| | 20 | 15,73 | 2,08 | 15,04 | 2,33 | 14,97 | 2,62 | 14,82 | 3,11 | 14,07 | 3,50 | 13,32 | 3,92 |
| E(D/B)(H/L)Q014BA6V3 | -20 (a) | 6,31 | 2,69 | 6,13 | 2,93 | | | | | | | | |
| | -15 | 7,05 | 2,75 | 6,80 | 3,00 | 6,57 | 3,29 | | | | | | |
| | -7 | 8,57 | 2,82 | 8,23 | 3,08 | 7,89 | 3,38 | 7,72 | 3,68 | | | | |
| | -2 | 9,11 | 2,88 | 8,74 | 2,91 | 8,38 | 3,20 | 8,18 | 3,49 | 8,05 | 3,86 | | |
| | 2 | 10,13 | 2,87 | 9,72 | 2,93 | 9,31 | 3,22 | 9,09 | 3,52 | 8,95 | 3,89 | 8,53 | 4,30 |
| | 7 | 14,59 | 2,95 | 14,00 | 3,20 | 13,42 | 3,58 | 13,10 | 3,91 | 12,89 | 4,33 | 12,30 | 4,79 |
| | 12 | 15,44 | 2,86 | 14,84 | 3,15 | 14,23 | 3,48 | 13,91 | 3,80 | 13,70 | 4,22 | 13,07 | 4,68 |
| | 15 | 16,73 | 2,84 | 16,09 | 3,14 | 15,45 | 3,48 | 15,10 | 3,81 | 14,88 | 4,22 | 14,21 | 4,68 |
| | 20 | 19,09 | 2,81 | 18,38 | 3,11 | 17,67 | 3,46 | 17,30 | 3,79 | 16,58 | 4,22 | 15,85 | 4,69 |
| E(D/B)(H/L)Q016BA6V3 | -20 (a) | 7,00 | 3,17 | 6,89 | 3,45 | | | | | | | | |
| | -15 | 7,80 | 3,24 | 7,61 | 3,53 | 7,43 | 3,87 | | | | | | |
| | -7 | 9,45 | 3,33 | 9,15 | 3,63 | 8,86 | 3,99 | 8,70 | 4,34 | | | | |
| | -2 | 9,96 | 3,09 | 9,62 | 3,36 | 9,29 | 3,71 | 9,09 | 4,04 | 8,76 | 4,46 | | |
| | 2 | 11,08 | 3,11 | 10,69 | 3,40 | 10,31 | 3,74 | 10,08 | 4,08 | 9,89 | 4,50 | 9,31 | 4,98 |
| | 7 | 16,58 | 3,51 | 16,00 | 3,79 | 15,42 | 4,24 | 15,06 | 4,62 | 14,47 | 5,11 | 13,88 | 5,64 |
| | 12 | 17,29 | 3,41 | 16,69 | 3,75 | 16,08 | 4,13 | 15,71 | 4,51 | 15,09 | 4,98 | 14,47 | 5,51 |
| | 15 | 18,75 | 3,41 | 18,10 | 3,75 | 17,45 | 4,13 | 17,05 | 4,52 | 16,38 | 5,00 | 15,71 | 5,53 |
| | 20 | 21,42 | 3,40 | 20,70 | 3,74 | 19,98 | 4,13 | 19,53 | 4,52 | 18,77 | 5,01 | 18,01 | 5,54 |

3TW58012-1A

### SYMBOLS

| | | |
|---|---|---|
| CC | : | Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW) |
| HC | : | Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW) |
| PI | : | Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW) |
| LWE | : | Leaving Water Evaporator temperature (°C) |
| LWC | : | Leaving Water Condensor temperature (°C) |
| Tamb | : | Ambient temperature (°C) RH=85% |

**Notes:**
- For the model with heatertape (*RLQ): when ambiernt temperature becomes lower than [F-02] (default = 3°C) bottom plate heater power input to be added = 95W
- [F-02] = BPH ON temp for more details see installationmanual of indoor unit.

### Conditions

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For ERHQ011-16AAW1 models only: if Tamb < 4°C: bottom plate heater power input to be added = 95 W

# 4 Capacity tables

## 4 - 2 Cooling capacity tables

**EBHQ011-016BA6V3**

**Maximum Cooling Capacity**

| | $T_{amb}$ [°C] | 20 | | 25 | | 30 | | 35 | | 40 | | 45 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LWE [°C] | CC [kW] | PI [kW] | CC [kW] | PI [kW] | CC [kW] | PI [kW] | CC [kW] | PI [kW] | CC [kW] | PI [kW] | CC [kW] | PI [kW] |
| EB(H/L)Q011BA6V3 | 7 | 11,08 | 2,70 | 10,99 | 2,97 | 10,62 | 3,26 | 10,00 | 3,60 | 9,16 | 3,97 | 8,14 | 4,38 |
| | 10 | 11,77 | 2,73 | 11,66 | 3,00 | 11,27 | 3,31 | 10,61 | 3,65 | 9,73 | 4,03 | 8,65 | 4,44 |
| | 13 | 12,93 | 2,76 | 12,81 | 3,04 | 12,38 | 3,35 | 11,66 | 3,70 | 10,70 | 4,08 | 9,39 | 4,65 |
| | 15 | 13,74 | 2,78 | 13,61 | 3,06 | 13,15 | 3,38 | 12,39 | 3,73 | 11,37 | 4,12 | 9,73 | 4,54 |
| | 18 | 15,17 | 2,81 | 14,66 | 3,10 | 13,87 | 3,42 | 12,85 | 3,78 | 11,51 | 4,18 | 9,85 | 4,18 |
| | 22 | 16,92 | 2,85 | 16,36 | 3,15 | 15,49 | 3,48 | 14,35 | 3,85 | 13,00 | 4,26 | 10,32 | 3,73 |
| EB(H/L)Q014BA6V3 | 7 | 13,87 | 4,02 | 13,75 | 4,39 | 13,29 | 4,81 | 12,50 | 5,30 | 11,08 | 5,08 | 9,81 | 5,60 |
| | 10 | 14,92 | 4,08 | 14,79 | 4,46 | 14,28 | 4,90 | 13,43 | 5,39 | 11,92 | 5,17 | 10,56 | 5,70 |
| | 13 | 16,38 | 4,15 | 16,23 | 4,54 | 15,68 | 4,99 | 14,75 | 5,49 | 13,09 | 5,26 | 10,95 | 5,78 |
| | 15 | 17,39 | 4,20 | 17,23 | 4,60 | 16,64 | 5,05 | 15,66 | 5,55 | 13,91 | 5,32 | 11,35 | 5,64 |
| | 18 | 18,92 | 4,27 | 18,28 | 4,68 | 17,29 | 5,14 | 15,99 | 5,65 | 13,99 | 5,41 | 11,49 | 5,20 |
| | 22 | 21,07 | 4,37 | 20,37 | 4,79 | 19,28 | 5,27 | 17,85 | 5,79 | 15,65 | 5,54 | 12,05 | 4,64 |
| EB(H/L)Q016BA6V3 | 7 | 14,52 | 4,45 | 14,44 | 4,87 | 13,95 | 5,33 | 13,10 | 5,85 | 11,57 | 5,58 | 9,84 | 5,47 |
| | 10 | 15,66 | 4,54 | 15,53 | 4,97 | 14,99 | 5,44 | 14,07 | 5,96 | 12,43 | 5,68 | 10,59 | 5,56 |
| | 13 | 17,19 | 4,64 | 17,05 | 5,07 | 16,45 | 5,55 | 15,44 | 6,08 | 13,64 | 5,79 | 10,98 | 5,65 |
| | 15 | 18,26 | 4,71 | 18,09 | 5,14 | 17,46 | 5,63 | 16,39 | 6,16 | 14,49 | 5,88 | 11,38 | 5,51 |
| | 18 | 19,87 | 4,81 | 19,20 | 5,25 | 18,14 | 5,74 | 16,73 | 6,28 | 14,57 | 5,97 | 11,52 | 5,08 |
| | 22 | 22,14 | 4,95 | 21,39 | 5,40 | 20,21 | 5,90 | 18,66 | 6,44 | 16,28 | 6,12 | 12,08 | 4,53 |

3TW58012-1A

### SYMBOLS

| | | |
|---|---|---|
| CC | : | Cooling capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW) |
| HC | : | Heating capacity at maximum operating frequency, measured acc. Eurovent 6/C/003-2006 (kW) |
| PI | : | Power input (kW), measured acc. Eurovent 6/C/003-2006 (kW) |
| LWE | : | Leaving Water Evaporator temperature (°C) |
| LWC | : | Leaving Water Condensor temperature (°C) |
| Tamb | : | Ambient temperature (°C) RH=85% |

### NOTES

1 **Cooling capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C
Capacity values may not be extrapolated below 7°C leaving water temperature

2 **Heating capacity**
Capacity is according to Eurovent rating standard 6/C/003-2006 and valid for chilled water range Dt = 3~8°C

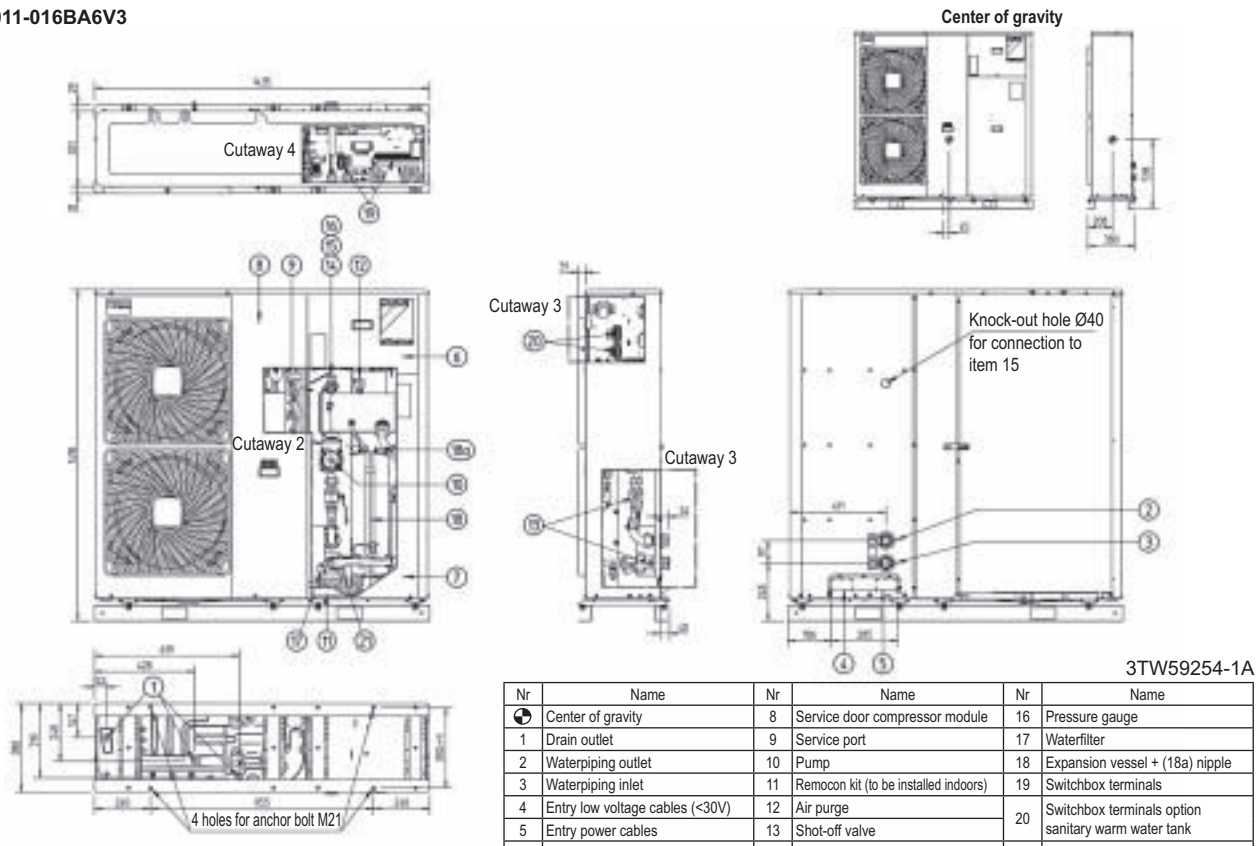
3 **Power input**
Power input is total of indoor and outdoor unit, except the circulation pump; according to Eurovent rating standard 6/C/003-2006.
Pump power input to be added = 90 W (according EN14511).
For ERHQ011-16AAW1 models only: if Tamb < 4°C: bottom plate heater power input to be added = 95 W

**Notes:**
- For the model with heatertape (*RLQ): when ambiernt temperature becomes lower than [F-02] (default = 3°C) bottom plate heater power input to be added = 95W
- [F-02] = BPH ON temp for more details see installationmanual of indoor unit.

# 5 Dimensional drawing & centre of gravity

## 5 - 1 Dimensional drawing

**EBHQ011-016BA6V3**

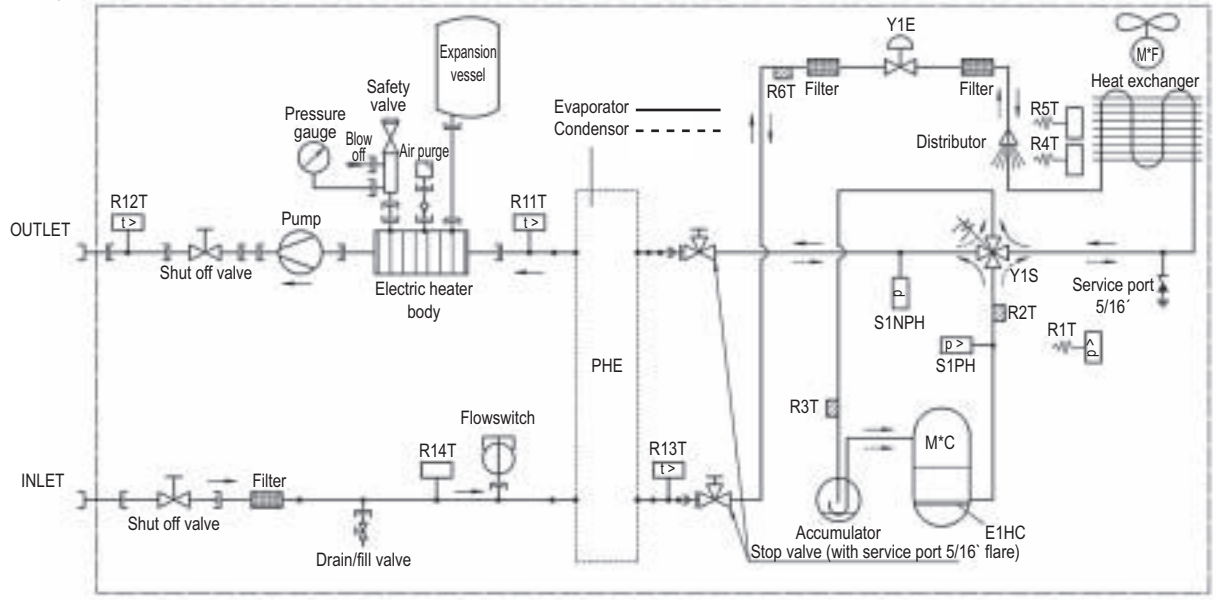



| Nr | Name | Nr | Name | Nr | Name |
|---|---|---|---|---|---|
| ◔ | Center of gravity | 8 | Service door compressor module | 16 | Pressure gauge |
| 1 | Drain outlet | 9 | Service port | 17 | Waterfilter |
| 2 | Waterpiping outlet | 10 | Pump | 18 | Expansion vessel + (18a) nipple |
| 3 | Waterpiping inlet | 11 | Remocon kit (to be installed indoors) | 19 | Switchbox terminals |
| 4 | Entry low voltage cables (<30V) | 12 | Air purge | 20 | Switchbox terminals option sanitary warm water tank |
| 5 | Entry power cables | 13 | Shot-off valve | | |
| 6 | Service door switchbox | 14 | Blow-off valve | 21 | Drain & fill valve |
| 7 | Service door hydraulic module | 15 | Blow-off drain | | |

# 6 Piping diagram

## 6 - 1 Piping diagram

**EBHQ011-016BA6V3**




3TW59255-1

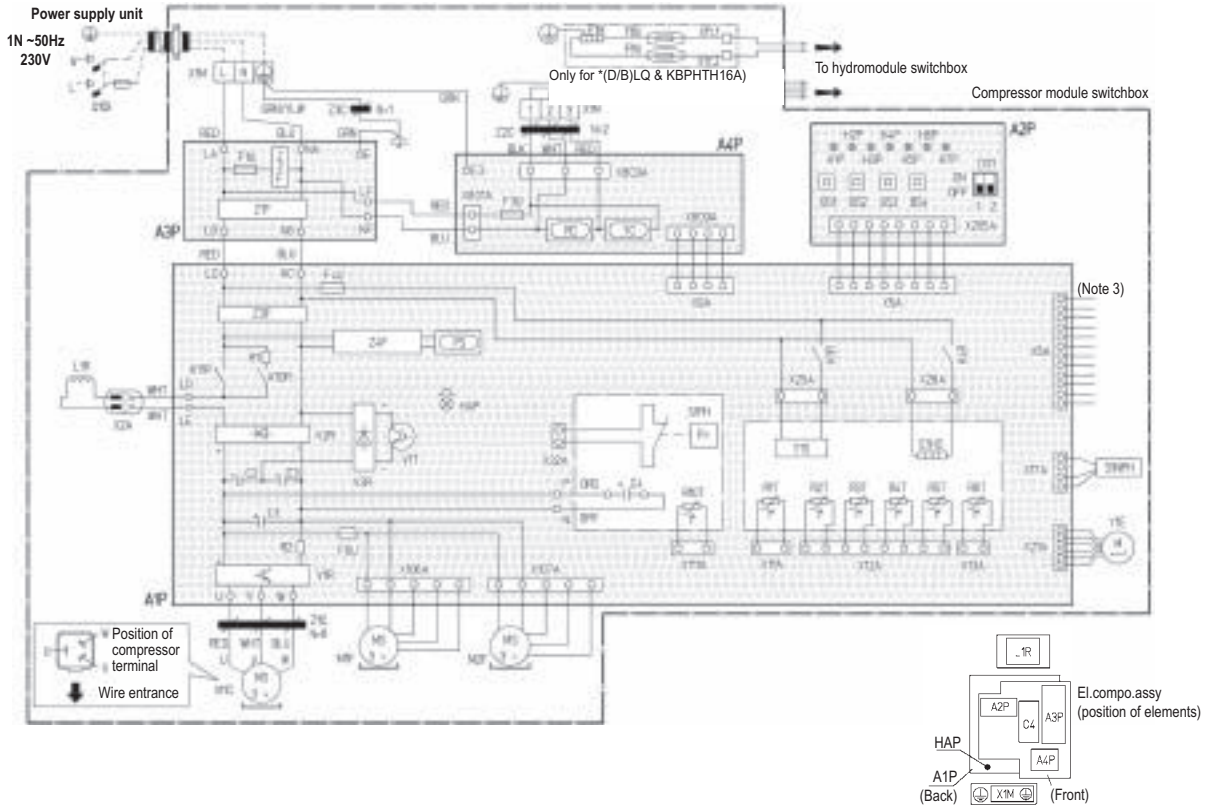
| | | | |
|---|---|---|---|
| R1T | Thermistor (air) | Y1S | Four way valve |
| R2T | Thermistor (discharge) | Y3S | Injection valve |
| R3T | Thermistor (suction) | S1PH | High pressure switch |
| R4T | Thermistor (liquid 1) | M*F | Fan motor |
| R5T | Thermistor (middle) | M*C | Compressor |
| R6T | Thermistor (liquid 2) | R11T | Outlet water heat-exchanger thermistor |
| S1NPH | Pressure sensor | R12T | Outlet water backup heater thermistor |
| Y1E | Electronic expansion valve | R13T | Refrigerant liquid side thermistor |
| E1HC | Crankcase heater | R14T | Inlet water thermistor |

HEATING
COOLING
Check valve
Flare connection
Screw connection
Flange connection
Pinched pipe
Spinned pipe

# 7 Wiring diagram

## 7 - 1 Wiring diagram

**EBHQ011-016BA6V3**




| | | | | | |
|---|---|---|---|---|---|
| A1P | Printed circuit board (main) | K1R | Magnetic relay (Y1S) | R6T | Thermistor (liquid) |
| A2P | Printed circuit board (inv.) | K4R | Magnetic relay (E1HC) | RC | Signal receiver circuit |
| A3P | Printed circuit board (noise filter) | K10R | Magnetic relay | R10T | Thermistor (fin) |
| A4P | Printed circuit board | K11R | Magnetic relay | S1NPH | Pressure sensor |
| BS1~BS4 | Push button switch | L1R | Reactor | S1PH | Pressure switch (high) |
| C1~C4 | Capacitor | M1C | Motor (compressor) | TC | Signal transmission circuit |
| DS1 | DIP Switch | M1F | Motor (fan) (upper) | V1R | Power module |
| E1H | Bottomplate heater | M2F | Motor (fan) (lower) | V2R, V3R | Diode module |
| E1HC | Crankcase heater | PS | Switching power supply | V1T | IGBT |
| F1U, F3U, F4U | Fuse (T 6,3A / 250V) | Q1DI | Earth leakage circuit breaker | X1M | Terminal strip (power supply) |
| F6U | Fuse (T 5,0A / 250V) | R1 | Resistor | Y1E | Electronic expansion valve |
| F7U, F8U | Fuse (F 1,0A / 250V) | R2 | Resistor | Y1S | Solenoid valve (4 way valve) |
| H1P~7P(A2P) | Light emit. diode (serv. monitor-orange) | R1T | Thermistor (air) | Z1C~Z3C | Noise filter (ferrity core) |
| | [H2P] Prepare,test - - - - - - - - - - - - - - flickering | R2T | Thermistor (discharge) | Z1F~Z4F | Noise filter |
| | Malfunction detection - - - - - - - - -light up | R3T | Thermistor (suction) | Optional connector | |
| HAP (A1P) | Light emitting diode (service monitor green) | R4T | Thermistor (heat exchanger) | X1Y | Connector |
| | | R5T | Thermistor (heat exchanger middle) | | |

: Terminal strip
: Connector
: Field wiring
: Protective earth (screw)
: Connection
: Noiseless earth
: Terminal
: Connector

Colors: BLU : Blue, BRN : Brown, GRN : Green, RED : RED, WHT : White, YLW : Yellow, ORG : Orange, BLK : Black

2TW59256-1

**NOTES**

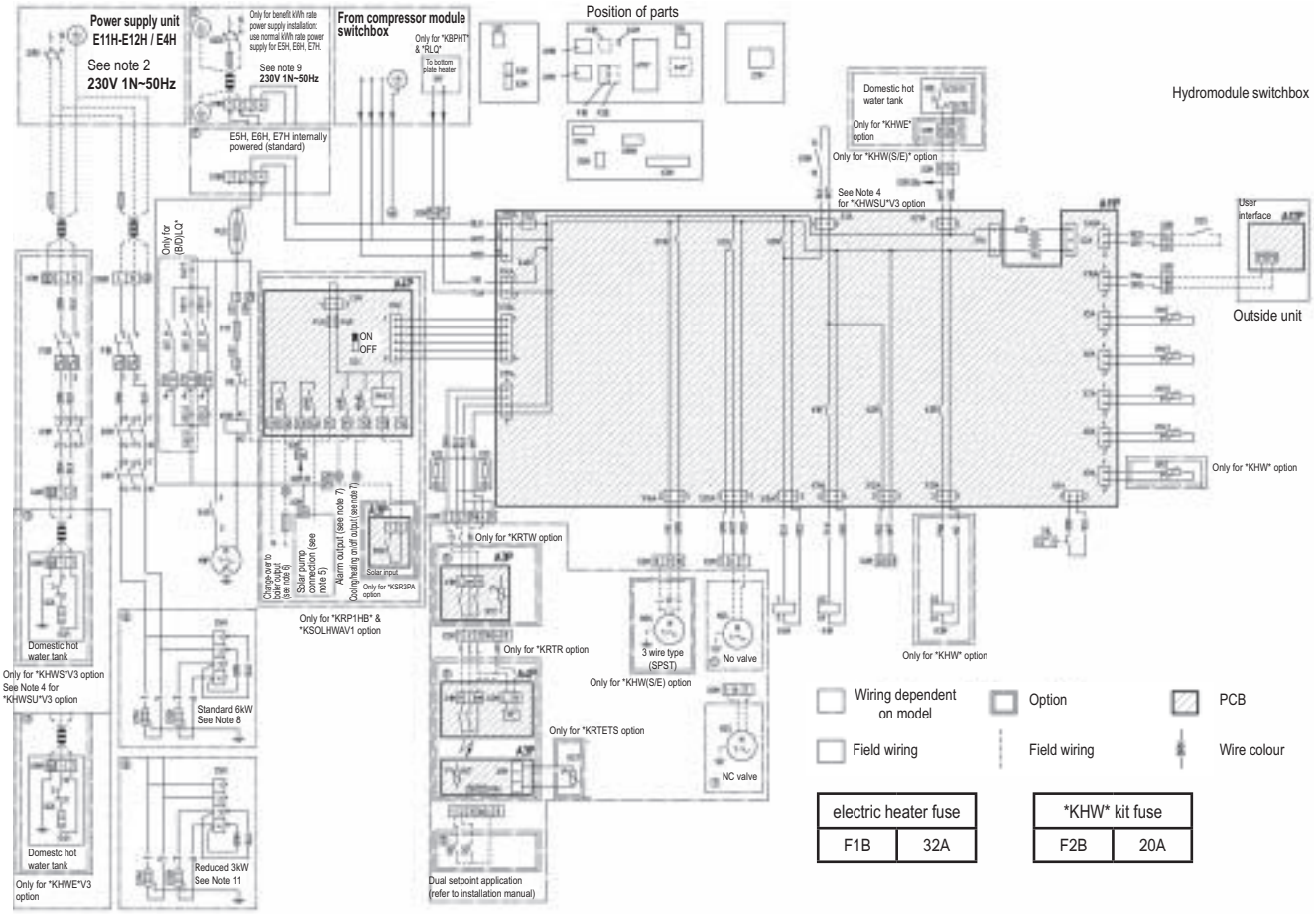
1 This wiring diagram only applies to the compressor module switchbox.
2 L: Live, N: Neutral
3 Not applicable
4 Do not operate the unit by short-circuiting protection device S1PH
5 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".
6

Option
Wiring dependent on model

# 7 Wiring diagram

## 7 - 1 Wiring diagram

**EBHQ011-016BA6V3**




| | | | | | |
|---|---|---|---|---|---|
| A11P | Main PCB | K1M | Contactor backup heater step | R14T | Inlet water thermistor |
| A12P | User interface PCB | K3M | Contactor booster heater | R5T (*KHW*) | Domestic hot water thermistor |
| A3P (*KRTW/R*) | Thermostat (PC=power circuit) | K4M | Pump relay | S1L | Flowswitch |
| A3P (*KSR3PA) | Solar pump station PCB | K5M | Contactor for backup heater all pole disconnection | S2S | Benefit kWh rate power supply contact |
| A4P (*KRP1HB) | Digital I/O PCB | M1P | Pump | S3S | Dual setpoint 2 contact |
| A4P (*KRTR) | Receiver PCB | M2S | 2way valve for cooling mode | S4S | Dual setpoint 1 contact |
| E11H-E12H | Backup heater element 1-2 (6kW) | M3S | 3way valve: floorheating/domestic hot water | SS1 | Dip switch |
| E4H | Booster heater (3kW) | PHC1 | Optocoupler input circuit | S1T | Thermostat switchbox heater |
| E5H | Switchbox heater | Q1DI, Q2DI | Earth leakage circuit breaker | S2T | Thermostat expansion vessel heater |
| E6H | Expansion vessel heater | Q1L | Thermal protector backup heater | S3T | Thermostat plate heat exchanger |
| E7H | Plate heat exchanger heater | Q2L | Thermal protector 1/2 booster heater | TR1 | Transformer 24V for PCB |
| F1B | Fuse backup heater | R1H (*KRTR) | Humidity sensor | V1S, V2S | Spark suppression 1, 2 |
| F1T | Thermal fuse backup heater | R1T (*KRTW/R*) | Ambient sensor | X1M~X11M, X2~5Y | Terminal strips, connector |
| F2B | Fuse booster heater | R2T (*KRTETS) | External sensor (floor or ambient) | | |
| FU1 | Fuse 3.15A 250V for PCB | R11T | Outlet water heat exchanger thermistor | | |
| FU2 | Fuse 5A T 250V | R12T | Outlet water backup heater thermistor | | |
| FuS, FuR | Fuse 5A 250V for digital I/O PCB | R13T | Refrigerant liquid side thermistor | | |

: Terminal strip
: Connector
: Field wiring
: Protective earth (screw)
: Terminal

Colors: BLU : Blue, BRN : Brown, GRN : Green, RED : RED, WHT : White, YLW : Yellow, ORG : Orange, BLK : Black, PNK : Pink, Vio : Violet, GRY: : Grey

2TW59256-2

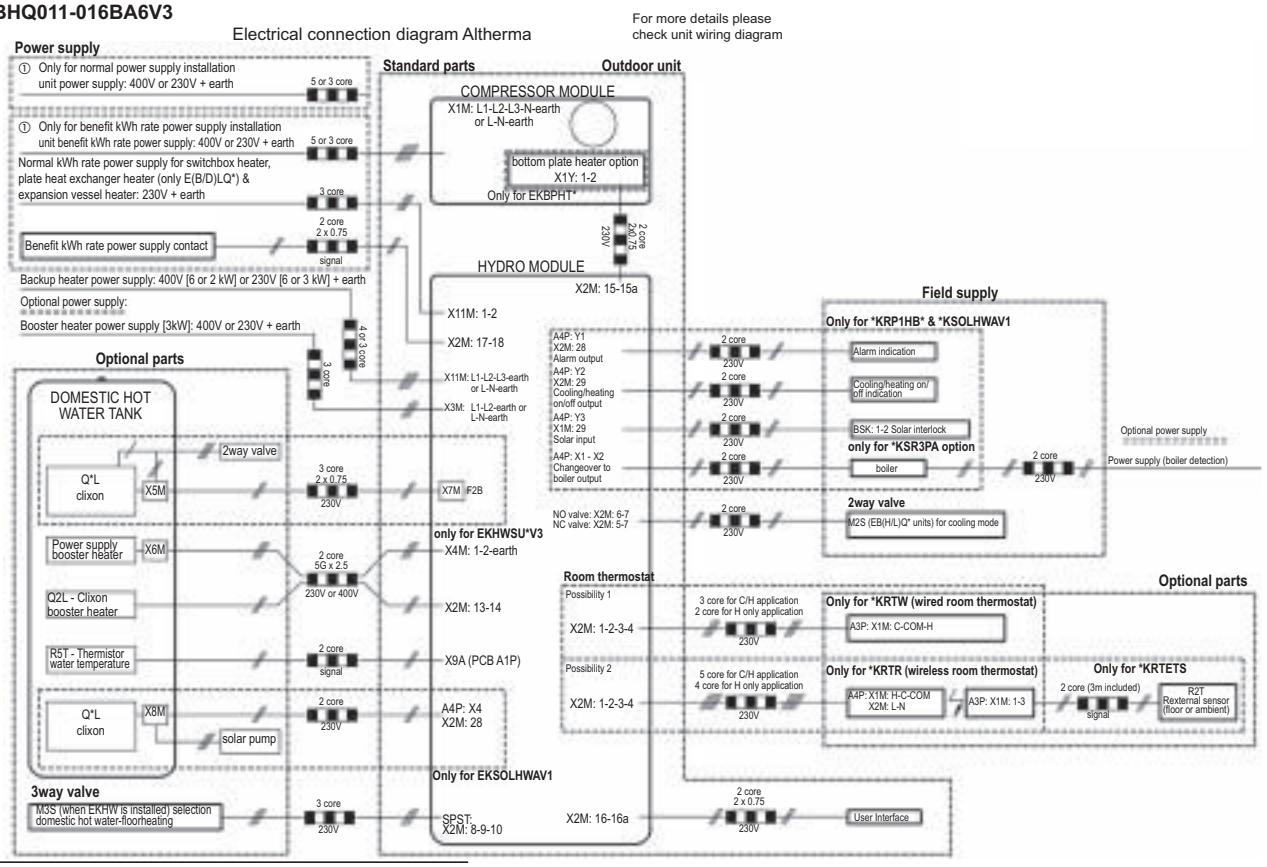
**NOTES**

1 This wiring diagram only applies to the hydromodule switchbox.
2 Use a dedicated power circuit for the backup heater and booster heater. Never use a power circuit shared by another appliance.
3 Do not operate the unit by shor-circuiting any protection device.
4 For *KHWSU*V3, refer to option manual.
5 For *KSOLHWAV1, refer to option manual.
6 Maximum load: 0,3A - 250VAC Minimum load: 20mA - 5VDC
7 230 VAC output Maximum load: 0.3A
8 Backupheater KW reduction, refer to installation manual.
9 For beneat kWh rate power supply installation, refer to installation manual.

# 7 Wiring diagram

## 7 - 2 External connection diagram

**EBHQ011-016BA6V3**




**NOTE**

1. In case of signal cable keep minimum distance to power cables > 5cm

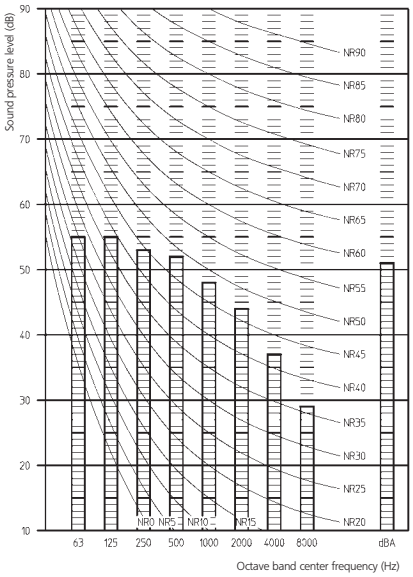
3TW59256-3

# 8 Sound data

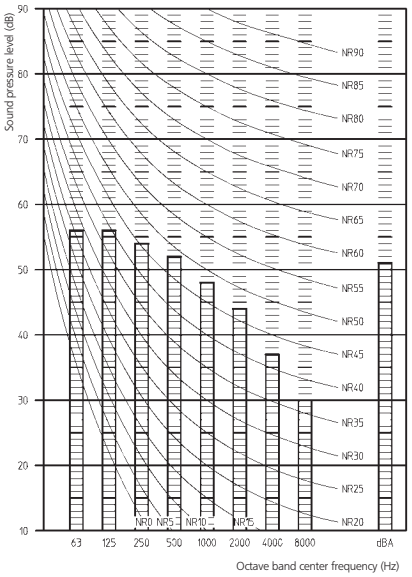
## 8 - 1 Sound pressure spectrum

**EBHQ011-016BA6V3**

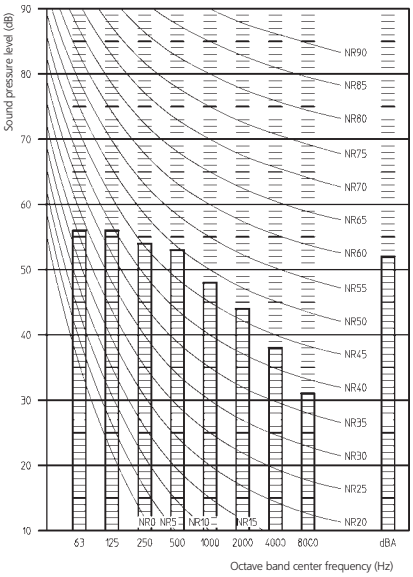
**E(D/B)(H/L)Q011* HEATING**




**E(D/B)(H/L)Q014* HEATING**

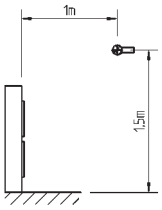



**E(D/B)(H/L)Q016* HEATING**




**Notes:**

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

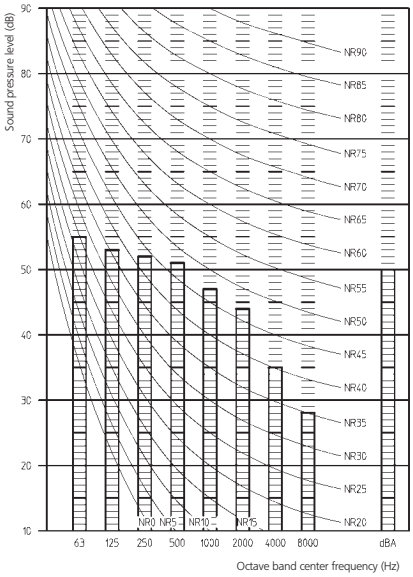



Measuring location (discharge side)

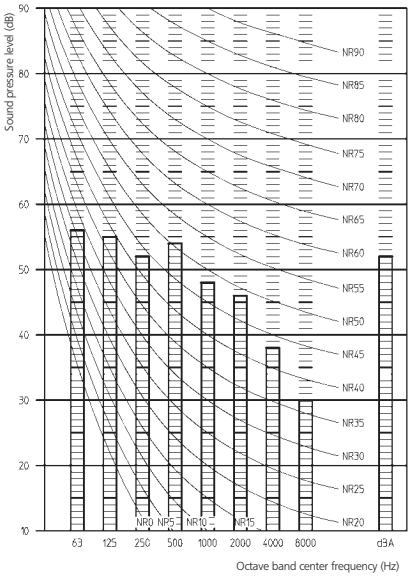
3TW58017-2

**EBHQ011-016BA6V3**

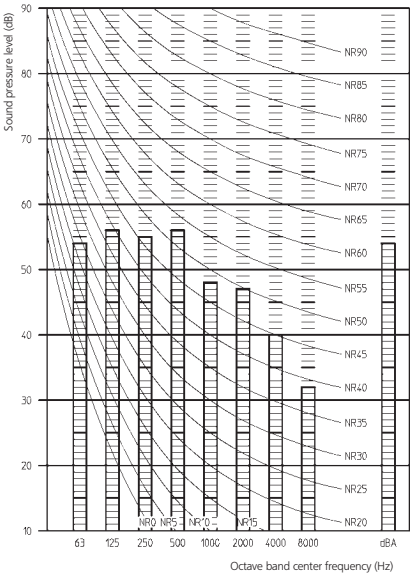
**E(D/B)(H/L)Q011* COOLING**




**E(D/B)(H/L)Q014* COOLING**

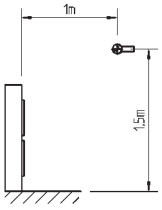



**E(D/B)(H/L)Q016* COOLING**




**Notes:**

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.




Measuring location (discharge side)

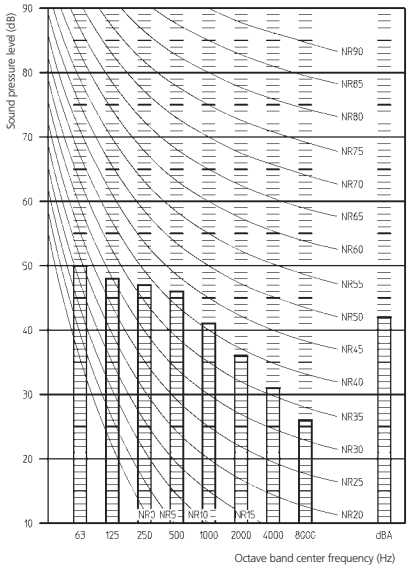
3TW58017-1

# 8 Sound data

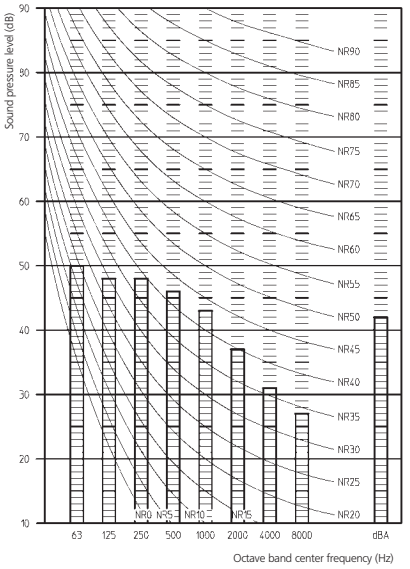
## 8 - 2 Sound pressure night quiet mode

**EBHQ011-016BA6V3**

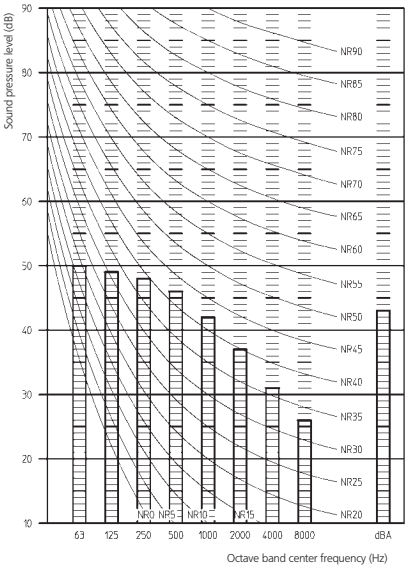
**E(D/B)(H/L)Q011* HEATING**




**E(D/B)(H/L)Q014* HEATING**

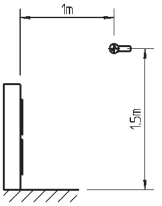



**E(D/B)(H/L)Q016* HEATING**




**Notes:**

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

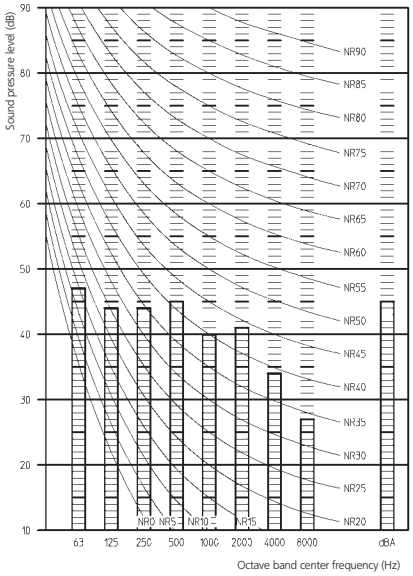



Measuring location (discharge side)

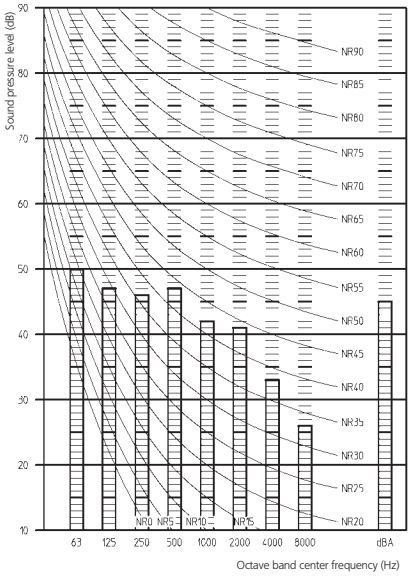
3TW58017-4

**EBHQ011-016BA6V3**

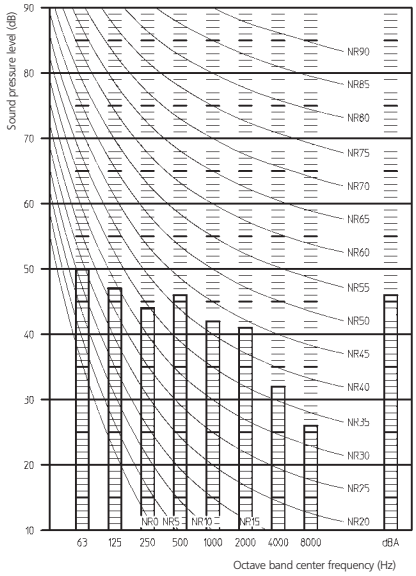
**E(D/B)(H/L)Q011* COOLING**




**E(D/B)(H/L)Q014* COOLING**

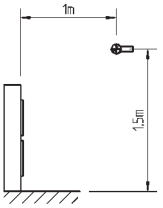



**E(D/B)(H/L)Q016* COOLING**




**Notes:**

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.




Measuring location (discharge side)

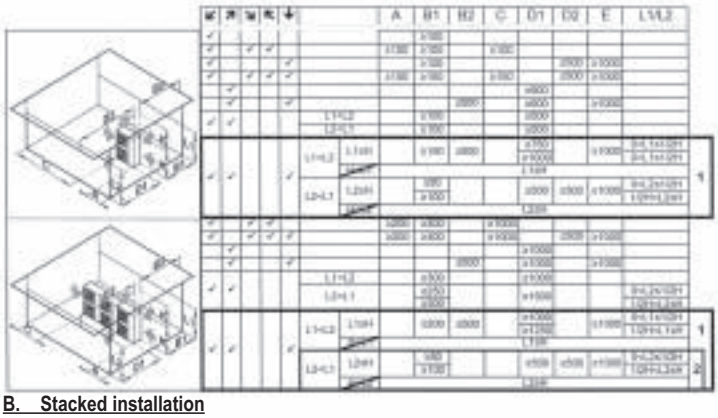
3TW58017-3

# 9 Installation

## 9 - 1 Service space

**EBHQ011-016BA6V3**

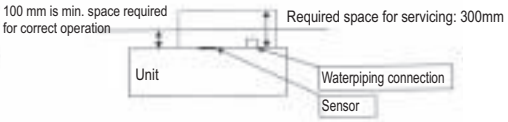
**A. Non stacked installation**



↙ Suction side obstacle
↗ Discharge side obstacle
↘ Left side obstacle
↖ Right side obstacle
↓ Top side obstacle
✓ Obstacle is present

This situation is not allowed

**NOTES**




1. In these cases, close bottom of the installation frame to prevent discharged air from being bypassed.
2. In these cases, only 2 units can be installed.

**B. Stacked installation**

1. Obstacles exist in front on the outlet side

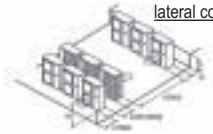
2. Obstacles exist in front of the air inlet

Do not stack more than one unit.
About 100 mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

**C. Multiple-row installation**

1. Installation of one unit per row

2. Installing multiple units (2 units or more) in lateral connection per row



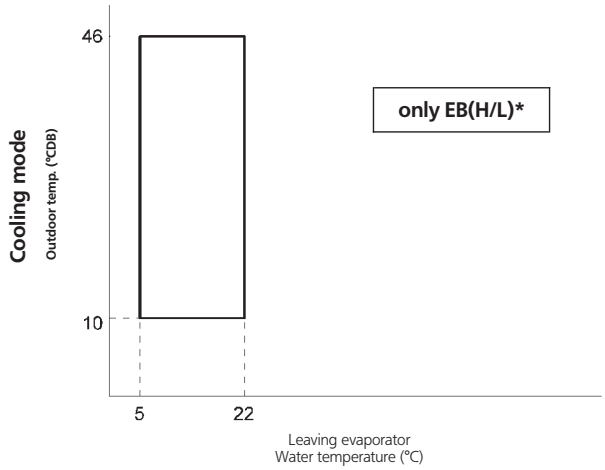
Relation of dimensions of H,A and L are shown in the table below.

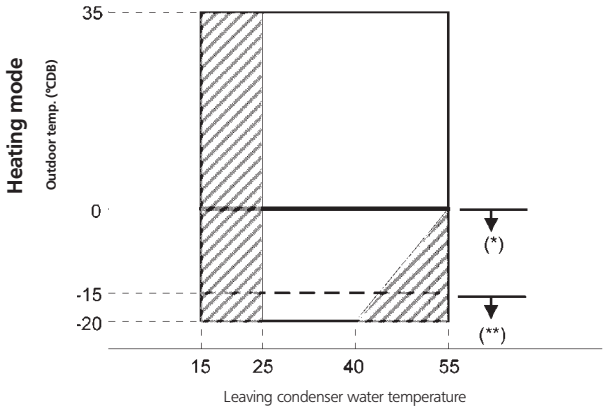
| | L | A |
|---|---|---|
| L ≤ H | 0 < L≤1/2H | 250 |
| | 1/2H < L | 300 |
| H < L | Installation not allowed | |

3TW58019-6A

# 10 Operation range

**EBHQ011-016BA6V3**



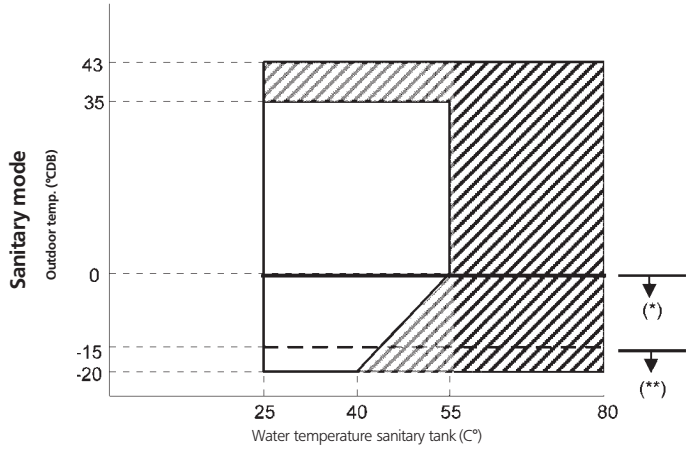




No heat pump operation, back up heater only

(*) E(D/B)L* units include special equipment (insulation, heater sheet, . . . ) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(D/B)H* models may experience problems with severe ice build-up on the aircooled coil. In case such conditions are expected, the E(D/B)L* must be installed instead.

Both E(D/B)L* and E(D/B)H* models have a freeze prevention function using the pump and back up heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen we recommend to use glycol.

(**) only E(D/B)L*




Booster heater operation only

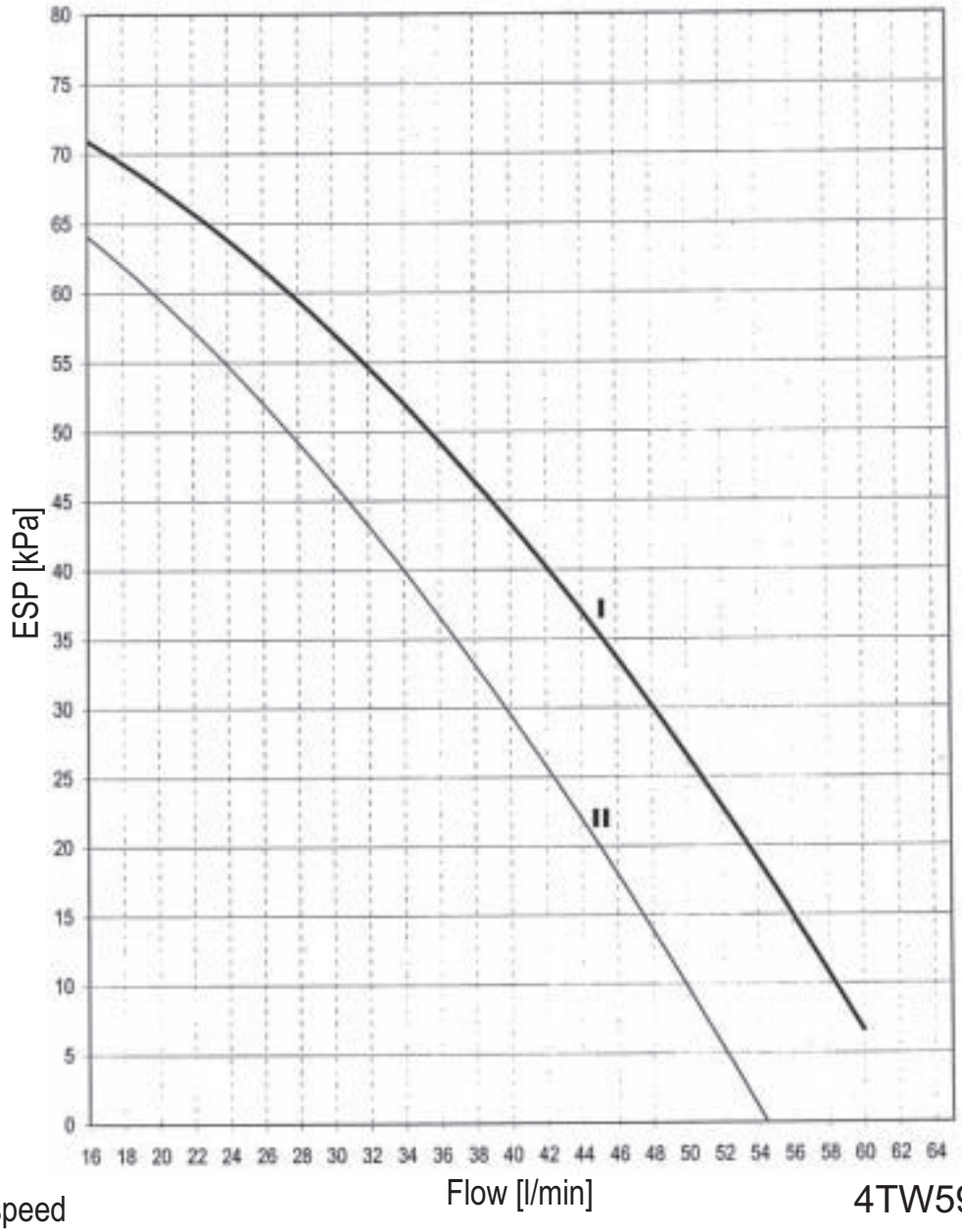
(**) only E(D/B)L*

4TW58013-1A

# 11 Hydraulic performance

## 11 - 1 Static pressure drop unit

### EBHQ011-016BA6V3




4TW59259-2

I high speed
II medium speed
ESP: external static pressure
Flow: waterflow through the unit

**Caution:**
Selecting a flow outside the curves can cause damage to or malfunction of the unit.
See also minimum and maximum allowed water flowrange in the technical specifications.